

PATENT CLAIMS

1. A composite material of a base body with a multilayer coating which has at least one multiphase layer of aluminum, zirconium and/or hafnium oxides and a single phase layer of Al_2O_3 , ZrO_2 or HfO_2 .

2. A composite material according to claim 1 characterized in that the multiphase layer contains an additional proportion of MgO and/or the single phase layer contains up to 1% of an additional titanium oxide proportion.

3. The composite material according to claim 1 or 2, characterized by at least two, preferably at least three, layers which are comprised each of a multiphase layer of oxides of Al, Zr, Ti and/or Al, Hf, Ti, and/or Al, Zr, Ti, Mg and/or Al, Hf, Ti, Mg and of a three phase oxide layer of Hf, Zr or Al.

4. The composite material according to one of claims 1 to 3 characterized in that the base body is composed of a hard metal, steel, cermet or ceramic.

5. The composite material according to one of claims 1 to 4 characterized in that between the substrate body and a first oxide layer, which preferably is a multiphase oxide layer, at least one layer of TiCN, HfCN or ZrCN is provided which preferably has a thickness of 1 to 15 μm , especially 3 to 8 μm .

6. The composite material according to one of claims 1 to 5 characterized in that between the multiphase oxide layer and the single phase oxide layer, preferably between each two such layers, one or more intermediate layers are provided of TiCN, HfCN, or ZrCN, each of which preferably has a thickness between 0.2 μm to 3 μm , especially 2 μm .

7. The composite material according to one of claims 1 to 6 characterized in that the total thickness of all of the multiphase oxide layers and all single phase oxide layers is 6 to 20 μm , preferably 10 μm , whereby further preferably the thickness of an individual multiphase oxide layer is 2 to 6 μm , preferably 4 μm , and/or the thickness of the individual single phase oxide layer is 1 to 5 μm , preferably 3 μm .

8. The composite material according to one of claims 1 to 7 characterized in that the multilayer coating is produced by means of CVD.

9. The composite material according to one of claims 1 to 8 characterized in that the composite material is subjected to a final dry blast treatment with using a granular blast agent composed of a high metal granulate and which at least in major part has a rounded grain configuration with a maximum diameter of 150 µm preferably with a maximum of 100 µm.